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EXAMINER

MOORTHY, ARAVIND K

ART UNIT	PAPER NUMBER
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2131

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/900,515

Applicant(s)

FREED ET AL.

Examiner

Aravind K. Moorthy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This is response to the communication on 23 June 2005.
2. Claims 1-53 are pending in the application.
3. Claims 1-53 have been rejected.

#### ***Response to Amendment***

4. The examiner approves of the amendment made to the abstract. The abstract no longer exceeds the 150-word limit. The objection to the specification is withdrawn.
5. The examiner approves the amendment made to claims 23 and 41. The claims no longer depend upon themselves. The examiner withdraws the claim objections to claims 23 and 41.
6. The examiner approves the amendment made to claim 21. The applicant has removed the step identifiers. Therefore, there is no longer a step missing from the method. The examiner withdraws claim rejection 35 USC § 112 for claim 21.

#### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-50 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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**8. Claims 1-8, 11, 45-47, 51 and 532 are rejected under 35 U.S.C. 102(e) as being anticipated by Savage U.S. Patent No. 6,442,687 B1.**

As to claim 1, Savage discloses a method for secure communications between a client and a server, comprising:

managing a communications negotiation between the client and the server through an intermediate device that supports a direct mode and a proxy mode [column 4 line 33 to column 5 line 51];

receiving encrypted data packets from the client with the intermediate device [column 7 line 32 to column 8 line 7];

decrypting each encrypted data packet with the intermediate device [column 7 line 32 to column 8 line 7];

forwarding unencrypted data packets from the intermediate device to the server using a communication session negotiated by the client and the server when the intermediate device operates in direct mode [column 7 line 32 to column 8 line 7];

forwarding unencrypted data packets from the intermediate device to the server using a communication session negotiated by the server and the intermediate device when the intermediate device operates in proxy mode [column 7 line 32 to column 8 line 7];

receiving data packets from the server [column 7 line 32 to column 8 line 7];

encrypting the data packets from the server [column 7 line 32 to column 8 line 7]; and

forwarding encrypted data packets to the client [column 7 line 32 to column 8 line 7].

As to claim 2, Savage discloses that the step of managing comprises:

receiving TCP session negotiation data from the client and modifying the negotiation data prior to forwarding the negotiation data to the server to establish the communications session between the client and the server when operating in direct mode [column 4 line 33 to column 5 line 51].

As to claim 3, Savage discloses modifying a SYN request from the client to the server to alter the packet transmission parameters [column 4 line 33 to column 5 line 51 column 4 line 33 to column 5 line 51].

As to claim 4, Savage discloses that the step of modifying includes modifying at least a maximum segment size value of the data packet [column 6, lines 32-56].

As to claim 5, Savage discloses that the method further includes the steps of negotiating an SSL session with the client [column 4 line 33 to column 5 line 51].

As to claim 6, Savage discloses that decrypting comprises decrypting SSL encrypted packet data, and wherein encrypting comprises encrypting a data packet with SSL [column 4 line 33 to column 5 line 51].

As to claim 7, Savage discloses the step of managing comprises receiving with the intermediate device communication negotiation data directed to the server from the client and responding to the negotiation in place of the server when the intermediate device operates in proxy mode [column 7 line 32 to column 8 line 7].

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As to claim 8, Savage discloses negotiating the communications session between the server and the intermediate device as a separate TCP session [column 7 line 32 to column 8 line 7].

As to claim 11, Savage discloses prior to the step of receiving encrypted data, of negotiating an encrypted data communications session between the intermediate device and the client [column 7 line 32 to column 8 line 7].

As to claim 45, Savage discloses an secure sockets layer processing acceleration device, comprising:

a client communication engine establishing a secure communications session with a client device via an open network [column 4 line 33 to column 5 line 51];

a server communication engine establishing an open communications session with a server via a secure network [column 4 line 33 to column 5 line 51]; and

an encryption and decryption engine operable on encrypted data packets received via the open communications session and on clear data received via the open communications session [column 7 line 32 to column 8 line 7],

wherein the communication engine supports: (1) a direct mode in which decrypted data packets is forwarded to the servers using a communication session negotiated by the client and the server, and (2) a proxy mode in which the acceleration device responds to the client on behalf of the server and forwards the decrypted data packets to the server

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using the open communications session established by the acceleration device and the server [column 7 line 32 to column 8 line 7].

As to claim 46, Savage discloses that when operating in direct mode the communication engine forwards modified communication session data to the server over the communication session between the client device and the server [column 7 line 32 to column 8 line 7].

As to claim 47, Savage discloses that the proxy mode the communication engine acts as a proxy for a plurality of servers in communication with the SSL acceleration device [column 4 line 33 to column 5 line 51].

As to claims 51 and 53, Savage discloses automatically switching the intermediate device from the direct mode to the proxy mode upon detecting a communication error associated with the direct mode [column 7 line 32 to column 8 line 7].

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**9. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 as applied to claim 1 above, and further in view of Cohen et al U.S. Patent No. 6,389,462 B1.**

As to claim 9, Savage does not teach that the step of managing comprises receiving communication negotiation data destined for the intermediate device, altering a

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destination and source IP addresses of the data, and forwarding the data to the server when operating in direct mode.

Cohen et al teaches a proxy server that alters a destination and source IP addresses of the data, and forwards the data to the server [column 9 line 19 to column 10 line 31].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage so that there would have been a proxy server that would have altered a destination and source IP addresses of the data and then forwarded the data to the server.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage by the teaching of Cohen et al, as described above, because address translation by a proxy server reduces latency and minimizes traffic onto and off of the network [column 1, lines 44-58].

As to claim 10, Savage does not teach that the step of receiving communication data comprises the receiving an ACK packet from the server destined for the intermediary device, altering the packet's destination and source IP addresses, and forwarding the packet to the client.

Cohen et al teaches receiving an ACK packet from the server destined for a proxy server, altering the packet's destination and source IP addresses, and forwarding the packet to the client.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage so that the proxy would have received an ACK packet from the server. The proxy server would have altered the packet's destination and source IP addresses, and forwarded the packet to the client.



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It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage by the teaching of Cohen et al, as described above, because address translation by a proxy server reduces latency and minimizes traffic onto and off of the network [column 1, lines 44-58].

**10. Claims 12, 14 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 as applied to claims 1 and 45 above, and further in view of Fujiyama et al U.S. Patent No. 6,052,728.**

As to claims 12 and 48, Savage does not teach that the step of managing comprises maintaining a database of entries on each session of data packets communicated between the client and the server.

Fujiyama et al teaches maintaining a log of entries on each session of data packets communicated between the client and the server [column 14, lines 9-23].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage so that there would have been a relay computer that would have maintained a log of entries n each session of data packets communicated between the client and the server.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage by the teaching of Fujiyama et al, as described above, because it provides a method to help locate the cause of a problem that occurs during communication [column 1, lines 24-27].

As to claim 14, the Savage-Fujiyama combination teaches that the entry further includes an initialization vector [Fujiyama et al column 6, lines 56-65].

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**11. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 and Fujiyama et al U.S. Patent No. 6,052,728 as applied to claim 12 above, and further in view of Bellaton et al U.S. Patent No. 6,473,425 B1.**

As to claims 13 and 15, the Savage-Fujiyama combination teaches that the database includes an entry for a session comprising a session ID [Fujiyama et al column 7, lines 58-62].

The Savage-Fujiyama combination does not teach that the database includes a TCP Sequence number and an SSL session number. The Savage-Fujiyama combination does not teach that the entry includes an expected ACK.

Bellaton et al teaches entries that include a TCP Sequence number, SSL session number and an expected ACK [column 8 line 53 to column 9 line 20].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Fujiyama combination so that a TCP Sequence number, SSL session number and an expected ACK would have been included in the database entry.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Fujiyama combination by the teaching of Bellaton et al, as described above, because implementing this method and by comparing a new packet to packets already queued for transmission, unnecessary duplicated transmission of a packet can be avoided where packet transmission has been delayed. Avoiding retransmission of the queued packet avoids aggravating the network congestion [column 5 line 66 to column 6 line 7].

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**12. Claims 16, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 as applied to claim 1 above, and further in view of Gelman et al U.S. Patent No. 6,415,329 B1.**

As to claims 16 and 17, Savage teaches receiving encrypted data packets, as discussed above for claim 1.

Savage does not teach that the step of receiving the encrypted data packets includes receiving data packets including encrypted application data spanning multiple packets, and the step of forwarding includes forwarding a portion of the application data contained in an individual encrypted TCP segments to the server without authentication. Savage does not teach that the step of authenticating the application data on receipt of all packets including the application data.

Gelman et al teaches receiving packets that includes application data spanning multiple packets, and the step of forwarding includes forwarding a portion of the application data contained in an individual TCP segments to the server without authentication [column 9, lines 16-65]. Gelman et al teaches the step of authenticating the application data on receipt of all packets including the application data [column 9, lines 16-65].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage so that the step of receiving the encrypted data packets would have included receiving the data packets that fragmented the application data. The step of forwarding would have included forwarding a portion of the application data contained in the individual fragmented TCP segments to

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the server without authentication. The application data would have been authenticated on receipt of all the packets including the application data.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage by the teaching of Gelman et al, as described above, because fragmenting the packets maintains a low susceptibility to transmission errors and makes it difficult for a third party to intercept the application [column 2, lines 58-63].

As to claim 19, Savage teaches that the data is buffered for a length sufficient to complete a block cipher used to encrypt the data [column 6, lines 32-56].

**13. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 and Gelman et al U.S. Patent No. 6,415,329 B1 as applied to claim 16 above, and further in view of Holtey et al U.S. Patent No. 5,293,424.**

As to claim 18, the Savage-Gelman combination is silent on the data not being buffered during decryption.

Holtey et al teaches data not being buffered during decryption [column 4 line 59 to column 5 line 2].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Gelman combination so that the data would not have been buffered during decryption.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Gelman combination by the

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teaching of Holtey et al, as described above, because buffering is a time consuming process and the buffered data is subject to attack [column 4 line 59 to column 5 line 2].

**14. Claims 20-22, 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellwood et al U.S. Patent No. 6,584,567 B1 in view of Maloney et al U.S. Patent No. 6,253,337 B1.**

As to claim 20, Bellwood et al discloses a method for secure communications between a client and one of a plurality of servers performed on an intermediary device, comprising:

establishing a communications session between the client and the one of the plurality of servers by receiving negotiation data from the client intended for the server and forwarding the negotiation data in modified form to the server, and receiving negotiation data from the server intended for the client and forwarding the negotiation data to the client to establish the client and the server as terminations for the communications session [column 4, lines 1-24];

establishing a secure communications session between the client and the intermediary device [column 4, lines 51-64];

receiving encrypted application data from the client at the intermediary device by the secure communication session between the intermediary device and the client [column 6, lines 10-30];

decrypting the application data [column 6, lines 10-30]; and

forwarding decrypted application data from the intermediary device to the one of the plurality of servers using the communications

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session established between the client and the server [column 6, lines 10-30].

Bellwood et al does not teach:

maintaining a database of the secure communications session including information on the session/packet associations.

Maloney et al teaches maintaining a database of the secure communications session including information on the session/packet associations [column 6, lines 33-51].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Bellwood et al so that the proxy server would have had a log that maintained records of the secure communications session including information on the session/packet associations.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Bellwood et al by the teaching of Maloney et al because without introducing additional traffic on a network, the system produces a virtual picture of network usage and network vulnerabilities. By organizing the inputs of multiple collection tools into visual schematics, Security Administrators become proactive in assessing network weaknesses and in identifying optimum locations for implementing security measures. With the information revealed by the system of the present invention, Security Administrators can identify potential traffic bottlenecks, locate the existence of backdoors, reduce bandwidth usage, develop profiles of users, and pinpoint illicit activity [column 1, lines 57-67].

As to claim 21, Bellwood et al teaches the method further including the steps of:

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receiving at the intermediary device application data from the server destined for the client[column 5 line 66 to column 6 line 9];

encrypting the application data at the intermediary device [column 5 line 66 to column 6 line 9]; and

forwarding the application data to the client along the secure communication session established between the intermediary device and the client [column 5 line 66 to column 6 line 9].

As to claim 22, Bellwood et al teaches that the method further includes the step of selecting one of the plurality of servers for each packet in the communications session and mapping all communications intended for the server to the one of the plurality of servers [column 4, lines 51-64].

As to claim 27, the Bellwood-Maloney combination teaches that the entry further includes an initialization vector [column 4, lines 1-35].

As to claim 29, Bellwood et al teaches that the step of forwarding includes:

forwarding data which spans over multiple TCP segments and forwarding data which is not authenticated [column 4, lines 51-64].

**15. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellwood et al U.S. Patent No. 6,584,567 B1 and Maloney et al U.S. Patent No. 6,253,337 B1 as applied to claim 20 above, and further in view of Cohen et al U.S. Patent No. 6,389,462 B1.**

As to claim 23, the Bellwood-Maloney combination does not teach that forwarding the application to the data comprises receiving packets from the one of the

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plurality of servers and modifying the source and destination addresses of the packet to forward the packet to the client.

Cohen et al teaches receiving packets from one of the plurality servers and modifying the source and destination addresses of the packet to return the packet to the client [column 9 line 19 to column 10 line 31].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bellwood-Maloney combination so that the proxy would have received packets from one of the servers and modified the source and destination addresses of the packet to return the packet to the client.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bellwood-Maloney combination by the teaching of Cohen et al, as described above, because address translation by a proxy server reduces latency and minimizes traffic onto and off of the network [column 1, lines 44-58].

As to claim 24, the Bellwood-Maloney combination teaches that the step of decrypting application comprises decrypting data and forwarding the data on to the one of the plurality of servers via a secure network [Bellwood et al column 6, lines 10-30].

As to claim 25, the Bellwood-Maloney combination teaches that the step of receiving application data from the one of the plurality of servers, encrypting the data, and forwarding encrypted data to the client [Bellwood et al column 6, lines 10-30].



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**16. Claims 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellwood et al U.S. Patent No. 6,584,567 B1 and Maloney et al U.S. Patent No. 6,253,337 B1 as applied to claim 20 above, and further in view of Bellaton et al U.S. Patent No. 6,473,425 B1.**

As to claims 26 and 28, the Bellwood-Maloney combination teaches an entry for a session ID [Maloney column 5 line 63 to column 6 line 32].

The Bellwood-Maloney combination does not teach that the database includes an entry for a session comprising a TCP Sequence number and an SSL session number. The Bellwood-Maloney combination does not teach that the entry includes an expected ACK.

Bellaton et al teaches entries that include a TCP Sequence number, SSL session number and an expected ACK [column 8 line 53 to column 9 line 20].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bellwood-Maloney combination so that a TCP Sequence number, SSL session number and an expected ACK would have been included in the database entry.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bellwood-Maloney combination by the teaching of Bellaton et al, as described above, because implementing this method and by comparing a new packet to packets already queued for transmission, unnecessary duplicated transmission of a packet can be avoided where packet transmission has been delayed. Avoiding retransmission of the queued packet avoids aggravating the network congestion [column 5 line 66 to column 6 line 7].

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**17. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bellwood et al U.S. Patent No. 6,584,567 B1 and Maloney et al U.S. Patent No. 6,253,337 B1 as applied to claim 20 above, and further in view of Holtey et al U.S. Patent No. 5,293,424.**

As to claim 30, the Bellwood-Maloney combination does not teach that the data is not buffered during decryption.

Holtey et al teaches data not being buffered during decryption [column 4 line 59 to column 5 line 2].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bellwood-Maloney combination so that the data would not have been buffered during decryption.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bellwood-Maloney combination by the teaching of Holtey et al, as described above, because buffering is a time consuming process and the buffered data is subject to attack [column 4 line 59 to column 5 line 2].

**18. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bellwood et al U.S. Patent No. 6,584,567 B1 and Maloney et al U.S. Patent No. 6,253,337 B1 as applied to claim 20 above, and further in view of Boeuf U.S. Patent No. 6,009,502.**

As to claim 31, the Bellwood-Maloney combination does not teach that the data is buffered for a length sufficient to complete a block cipher used to encrypt the data.

Boeuf teaches that data is buffered for a length sufficient to complete a block cipher [column 5, lines 21-67].

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Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bellwood-Maloney combination so that the data would have been buffered for a length sufficient to complete a block cipher used to encrypt the data.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bellwood-Maloney combination by the teaching of Boeuf, as described above, because it prevents the client from sending data when the server is no longer able to perform normal data storage operations. Such a protocol will operate to limit the amount of client vital data which might be lost [column 2, lines 36-42].

**19. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bellwood et al U.S. Patent No. 6,584,567 B1 and Maloney et al U.S. Patent No. 6,253,337 B1 as applied to claim 20 above, and further in view of Weinstein et al U.S. Patent No. 6,094,485.**

As to claim 32, the Bellwood-Maloney combination does not teach that the step of forwarding includes authenticating the decrypted data after a final segment of a multi-segment encrypted data stream is received.

Weinstein et al teaches verifying the decrypted data after a final segment of a multi-segment encrypted data stream is received [column 8, lines 37-64].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bellwood-Maloney combination so that the step of forwarding would have included verifying the decrypted data after a final segment of a multi-segment data stream was received.

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It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Bellwood-Maloney combination by the teaching of Weinstein et al, as described above, because it validates that none of the segments of data were altered during transmission by a third party.

**20. Claims 33-35, 38, 39, 41 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 in view of Maloney et al U.S. Patent No. 6,253,337 B1.**

As to claims 33, 39 and 41, Savage discloses an acceleration apparatus coupled to a public network and a secure network, communicating with a client via the public network and communicating with one of a plurality of servers via the secure network, comprising:

a network communications interface [column 4 line 32 to column 5 line 51];

at least one processor [column 4 line 32 to column 5 line 51];

programmable dynamic memory [column 4 line 32 to column 5 line 51];

a communications channel coupling the processor, memory and network communications interface [column 4 line 32 to column 5 line 51];

a client/server open communications session manager [column 4 line 32 to column 5 line 51];

a client secure communication session manager [column 4 line 32 to column 5 line 51]; and

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a data packet encryption and decryption engine [column 7 line 32 to column 8 line 7],

wherein the acceleration apparatus is adapted to operate in a direct mode and a proxy mode [column 7 line 32 to column 8 line 7],

wherein in the direct mode the acceleration apparatus decrypts data packets received from the client and forwards the decrypted data packets to one of the servers using a communication session negotiated by the client and the server [column 7 line 32 to column 8 line 7],

wherein in the proxy mode the acceleration apparatus responds to the client on behalf of the server and forwards the decrypted data packets to the server using a communication session negotiated by the acceleration device and the server [column 7 line 32 to column 8 line 7].

Savage does not teach a client/server secure communications session tracking database.

Maloney et al teaches a client/server secure communications session tracking database [column 6, lines 33-51].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage so that the proxy would have had a client/server secure communications session tracking database.

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It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage by the teaching of Maloney et al because without introducing additional traffic on a network, the system produces a virtual picture of network usage and network vulnerabilities. By organizing the inputs of multiple collection tools into visual schematics, Security Administrators become proactive in assessing network weaknesses and in identifying optimum locations for implementing security measures. With the information revealed by the system of the present invention, Security Administrators can identify potential traffic bottlenecks, locate the existence of backdoors, reduce bandwidth usage, develop profiles of users, and pinpoint illicit activity [column 1, lines 57-67].

As to claim 34, Savage teaches that in proxy mode the client open communications session manager and secure communication manager enables the apparatus as a TCP and SSL proxy for the server [column 4 line 32 to column 5 line 51].

As to claim 35, Savage teaches that in direct mode the communications session managers enable transparent secure and open communication between the client and the server [column 7 line 32 to column 8 line 7].

As to claim 38, Savage teaches that data packet encryption and decryption engine performs SSL encryption and decryption on data packets transmitted between the client and the at least one server [column 7 line 32 to column 8 line 7].

As to claim 52, Savage teaches that the acceleration apparatus automatically switches from the direct mode to the proxy mode upon detection of a communication error associated with the communication session negotiated by the client and the server [column 7 line 32 to column 8 line 7].

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**21. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 and Maloney et al U.S. Patent No. 6,253,337 B1 as applied to claim 33 above, and further in view of Cohen et al U.S. Patent No. 6,389,462 B1.**

As to claim 36, the Savage-Maloney combination does not teach that in direct mode the client negotiation managers route packets between the client and the one of the plurality of servers by modifying source and destination addresses.

Cohen et al teaches receiving packets from one of the plurality servers and modifying the source and destination addresses of the packet to return the packet to the client [column 9 line 19 to column 10 line 31].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Maloney combination so that the proxy would have routed packets between the client and one of the servers by modifying the source and destination addresses of the packet.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Maloney combination by the teaching of Cohen et al, as described above, because address translation by a proxy server reduces latency and minimizes traffic onto and off of the network [column 1, lines 44-58].

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**22. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 and Maloney et al U.S. Patent No. 6,253,337 B1 as applied to claim 33 above, and further in view of Harper et al U.S. Patent No. 6,820,215 B2.**

As to claim 37, the Savage-Maloney combination does not teach a load selection manager balancing the routing of multiple open and secure communications sessions between a plurality of clients and a plurality of servers based on current processing levels of the servers.

Harper et al teaches load selection manager balancing the routing of multiple open and secure communications sessions between a plurality of clients and a plurality of servers [column 6, lines 16-29].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Maloney combination so that there would have been a load selection manager balancing the routing of multiple open and secure communications sessions between a plurality of clients and a plurality of servers.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Maloney combination by the teaching of Harper et al, as described above, because it allows heavily accessed Web sites to increase capacity, since multiple server machines can be dynamically added while retaining the abstraction of a single entity that appears in the network as a single logical server. In addition, failure of one or more of the server machines in a server cluster need



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not completely disable the operation of remainder of the server cluster [column 2, lines 18-33].

**23. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 and Maloney et al U.S. Patent No. 6,253,337 B1 as applied to claim 33 above, and further in view of Bellaton et al U.S. Patent No. 6,473,425 B1.**

As to claim 40, the Savage-Maloney combination does not teach that the database includes a TCP Sequence number and an SSL session number.

Bellaton et al teaches entries that includes a TCP Sequence number and SSL session number [column 8 line 53 to column 9 line 20].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Maloney combination so that a TCP Sequence number and SSL session number would have been included in the database entry.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Maloney combination by the teaching of Bellaton et al, as described above, because implementing this method and by comparing a new packet to packets already queued for transmission, unnecessary duplicated transmission of a packet can be avoided where packet transmission has been delayed. Avoiding retransmission of the queued packet avoids aggravating the network congestion [column 5 line 66 to column 6 line 7].

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**24. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 and Maloney et al U.S. Patent No. 6,253,337 B1 as applied to claim 33 above, and further in view of Holtey et al U.S. Patent No. 5,293,424.**

As to claim 42, the Savage-Maloney combination is silent on the data not being buffered during decryption.

Holtey et al teaches data not being buffered during decryption [column 4 line 59 to column 5 line 2].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Maloney combination so that the data would not have been buffered during decryption.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Maloney combination by the teaching of Holtey et al, as described above, because buffering is a time consuming process and the buffered data is subject to attack [column 4 line 59 to column 5 line 2].

**25. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 and Maloney et al U.S. Patent No. 6,253,337 B1 as applied to claim 33 above, and further in view of Boeuf U.S. Patent No. 6,009,502.**

As to claim 43, the Savage-Maloney combination does not teach that the data is buffered for a length sufficient to complete a block cipher used to encrypt the data.

Boeuf teaches that data is buffered for a length sufficient to complete a block cipher [column 5, lines 21-67].

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Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Maloney combination so that the data would have been buffered for a length sufficient to complete a block cipher used to encrypt the data.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Maloney combination by the teaching of Boeuf, as described above, because it prevents the client from sending data when the server is no longer able to perform normal data storage operations. Such a protocol will operate to limit the amount of client vital data which might be lost [column 2, lines 36-42].

**26. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 and Maloney et al U.S. Patent No. 6,253,337 B1 as applied to claim 33 above, and further in view of Weinstein et al U.S. Patent No. 6,094,485.**

As to claim 44, the Savage-Maloney combination does not teach that client/server open communications session manager performs an authentication process that discards at least a portion of the decrypted, unauthenticated packet application data from the client prior to receiving a final segment of the application data and authenticates the decrypted data using only the remaining portion of the application data.

Weinstein et al teaches verifying the decrypted data after a final segment of a multi-segment encrypted data stream is received [column 8, lines 37-64].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Maloney combination so

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that the step of forwarding would have included verifying the decrypted data after a final segment of a multi-segment data stream was received.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the Savage-Maloney combination by the teaching of Weinstein et al, as described above, because it validates that none of the segments of data were altered during transmission by a third party.

**27. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 as applied to claim 45 above, and further in view of Holtey et al U.S. Patent No. 5,293,424.**

As to claim 49, Savage is silent on the data not being buffered during decryption.

Holtey et al teaches data not being buffered during decryption [column 4 line 59 to column 5 line 2].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage so that the data would not have been buffered during decryption.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage by the teaching of Holtey et al, as described above, because buffering is a time consuming process and the buffered data is subject to attack [column 4 line 59 to column 5 line 2].

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**28. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Savage U.S. Patent No. 6,442,687 B1 as applied to claim 45 above, and further in view of Harper et al U.S. Patent No. 6,820,215 B2.**

As to claim 50, Savage does not teach a load balancing engine that selects the server from a plurality of servers based on a load balancing algorithm that calculates current processing loads associated with each of the servers.

Harper et al teaches load balancing of servers [column 6, lines 16-29].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage so that the servers would have been load balanced.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Savage by the teaching of Harper et al, as described above, because it allows heavily accessed Web sites to increase capacity, since multiple server machines can be dynamically added while retaining the abstraction of a single entity that appears in the network as a single logical server. In addition, failure of one or more of the server machines in a server cluster need not completely disable the operation of remainder of the server cluster [column 2, lines 18-33].

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***Conclusion***

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aravind K. Moorthy whose telephone number is 571-272-3793. The examiner can normally be reached on Monday-Friday, 8:00-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Aravind K Moorthy  
September 1, 2005



  
Primary Examiner  
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9/2/05